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AN ARCHEOLOGICAL OVERVIEW AND MANAGEMENT PLAN FOR THE
TARHEEL ARMY MISSILE (U) WOODWARD-CLYDE CONSULTANTS
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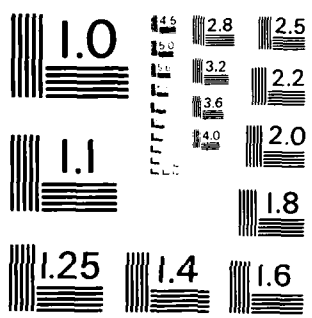
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Report No. 3

May 21, 1984

An Archeological Overview and Management Plan for the Tarheel Army Missile Plant Alamance County, North Carolina

Under Contract CX-5000-3-0771
with the

National Park Service
U.S. Department of the Interior
Atlanta, Georgia 30303

for the
U.S. Army Materiel Development and
Readiness Command

by

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15. Supplementary Notes This report was prepared as part of the DARCOM Historical/Archeological Survey (DHAS), an inter-agency technical services program to develop facility-specific archeological overviews and management plans for the U. S. Army Material Development and Readiness Command (DARCOM).		13. Type of Report & Period Covered FINAL	
16. Abstract (Limit: 200 words) The Tarheel Army Missile Plant (AMP) in Burlington, Alamance County, North Carolina, includes 33 acres of land that is almost completely covered by buildings or pavement. Nearly all the acreage has been under buildings, pavement, or gravelled surfaces for at least the past 40 years. No archeological survey has been conducted on the property, and no sites have been recorded on it. Historic archeological materials may remain under the paving. An intensive archival research program is recommended to assess the likelihood that buried resources exist on the facility. This program is estimated to require 17-26 work-days, for a cost of \$5000 to \$7000 in FY84 dollars. Following this work, consultation with the North Carolina SHPO may recommend either (1) the filing of (and written concurrence with) a negative declaration of preservation management needs, or (2) completion of an Historic Preservation Plan. This will provide the basis for an affirmative cultural resource management program for the Tarheel Army Missile Plant.			
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MANAGEMENT SUMMARY

As a manager of public lands, the Tarheel Army Missile Plant (AMP) has responsibilities for the management of the natural and cultural resources held on those lands, for the general benefit of the American people. This report documents the lack of archeological resources on the facility and recommends compliance procedures if any archeological resources are identified that could be impacted by any future construction.

No construction is planned for the Tarheel AMP that would modify the current surface of the facility, and no operations or maintenance activities would have any subsurface impacts. Nearly all the acreage has been under buildings, pavement, or gravelled surfaces for at least the past 40 years. No archeological survey has been conducted on the property, no sites have been recorded on it, and there appears to be little likelihood that any intact archeological resources of significance are retained on the property.

It is recommended that the next step be an intensive archival study designed to pinpoint any recorded locations which might contain archeological data from the historic period. This study is anticipated to require approximately 17-26 work-days, with costs ranging from \$5000 to \$7000 in FY84 dollars.

If the archival study indicates materials are likely to remain within the Tarheel facility, different management options are available. Among these are consultation with the North Carolina State Historic Preservation Officer to recommend either (1) the filing of (and written concurrence with) a negative declaration of preservation management needs, or (2) completion of an Historic Preservation Plan. Such a plan should be in compliance with Army Regulation AR 420 and be based on information available from this report and from the historic architectural study of the AMP presently being conducted by the Historic American Buildings Survey. This will provide the basis for an affirmative cultural resource management program appropriate to a land-managing agency whose fundamental mission is support for America's military.

PREPARERS AND QUALIFICATIONS

Gerald P. Smith is the Principal Investigator and author of this report. He holds a BA with Honors in Anthropology, an MA in Anthropology (University of North Carolina-Chapel Hill), and a PhD in Anthropology (University of Missouri-Columbia), all with emphasis in archeology and graduate minors in physical and historical geography. He is an adjunct Associate Professor of Anthropology at Memphis State University and has been curator of that Department's Chucalissa facility since 1968. His 20 years' experience in southeastern archeology has included excavation and survey work in Alabama, Arkansas, Kentucky, Mississippi, Missouri, North Carolina, Tennessee, and Virginia, with emphasis on cultural resource management projects during the past ten years. Projects of particular relevance to this facility include a preliminary survey of the New Hope (now B. Everett Jordan) Reservoir basin on the Haw and New Hope Rivers about 30 miles from the facility, and the excavation of a large proto-historic Nottoway village in southeastern Virginia.

Kenneth Hartsell is a contributing author. He holds a BA in Anthropology (East Carolina University) and a MA in Anthropology (Memphis State University), both with emphasis in archeology. He has done extensive archeological work in eastern North Carolina, southeastern Virginia, and western Tennessee during the past five years.

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Richard J. Clampitt and James B. Lee of Western Electric, John C. Reed of the U. S. Army Corps of Engineers, and their associates were most helpful in expediting Gerald Smith's visit to the facility and assembling the necessary facility data on very short notice. Roy Dickens and Tra-
wick Ward of the Research Laboratories of Anthropology, University of North Carolina, and Ned Woodall of the Department of Anthropology, Wake Forest University, and their staffs graciously assisted in the location of current local archeological data in the files of their facilities, again with little notice. Melissa Lehman accepted the burden of typing a major portion of the rough draft into the format of this report in the absence of the regular typist.

Additional thanks go to Dr. Mark R. Barnes, NPS, SERO; Ms. Mary Lee Jefferson, NPS, WASO; Mr. John J. Little, Deputy SHPO, and his staff, from North Carolina, who reviewed the draft Tarheel document; and Ms. Zandra Dillion, Contracting Officer, NPS.

Final report production, including graphics, has been completed by Woodward-Clyde Consultants, with editorial review (particularly of management recommendations) and text preparation completed by Dr. Ruthann Knudson, Ms. Betty Schmucker, and Mr. Charles McNutt.

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FOREWORD

As a federal agency with large public land holdings, the U. S. Army is responsible for the stewardship of a variety of natural and cultural resources that are part of its installations' landscapes. The Army's Materiel Development and Readiness Command (DARCOM) presently manages a nationwide network of 65 installations and 101 subinstallations and separate units, which range in size from one acre to over one million acres. As part of its programs of environmental and property management, DARCOM has requested that the U. S. Department of the Interior's National Park Service (NPS) provide technical guidance to develop programs for managing installation cultural resources.

NPS is thus conducting the DARCOM Historical/Archeological Survey (DHAS), which has two major disciplinary elements. The architectural review and planning function is being directed by the Service's Historic American Buildings Survey (HABS), while the prehistoric and historic archeological resource assessment and planning function is the responsibility of the Service's Interagency Resource Division (IRD). IRD has contracted with Woodward-Clyde Consultants (WCC) for the development of guidelines for the DARCOM archeological management planning effort, and for the completion of over 40 overviews and plans throughout the central United States. WCC has in turn subcontracted the technical studies to several regional subcontractors, with final editorial review of reports and preparation of text and illustrations handled by WCC.

This overview and recommended management plan for the archeological resources of the Tarheel Army Missile Plant was prepared by Memphis State University, Memphis, under subcontract to WCC. It follows the guidance of "A Work Plan for the Development of Archeological Overviews and Management Plans for Selected U. S. Department of the Army DARCOM Facilities," prepared by Ruthann Knudson, David J. Fee, and Steven E. James as Report No. 1 under the WCC DARCOM contract. A complete list of DHAS project reports is available from the National Park Service, Washington, DC.

The DHAS program marks a significant threshold in American cultural resource management. It provides guidance that is nationally applicable, is appropriately directed to meeting DARCOM resource management needs within the context of the Army's military mission, and is developed in complement to state and regional preservation protection planning (the RP3 process, through State Historic Preservation Offices).

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All of us participating in this effort, particularly in the development of this report, are pleased to have had this opportunity. Woodward-Clyde Consultants appreciates the technical and contractual guidance provided by the National Park Service in this effort, from the Atlanta and Washington DC, offices and also from other specialists in NPS regional offices in Philadelphia, Denver, and San Francisco.

Woodward-Clyde Consultants

Ruthann Knudson

INTRODUCTION

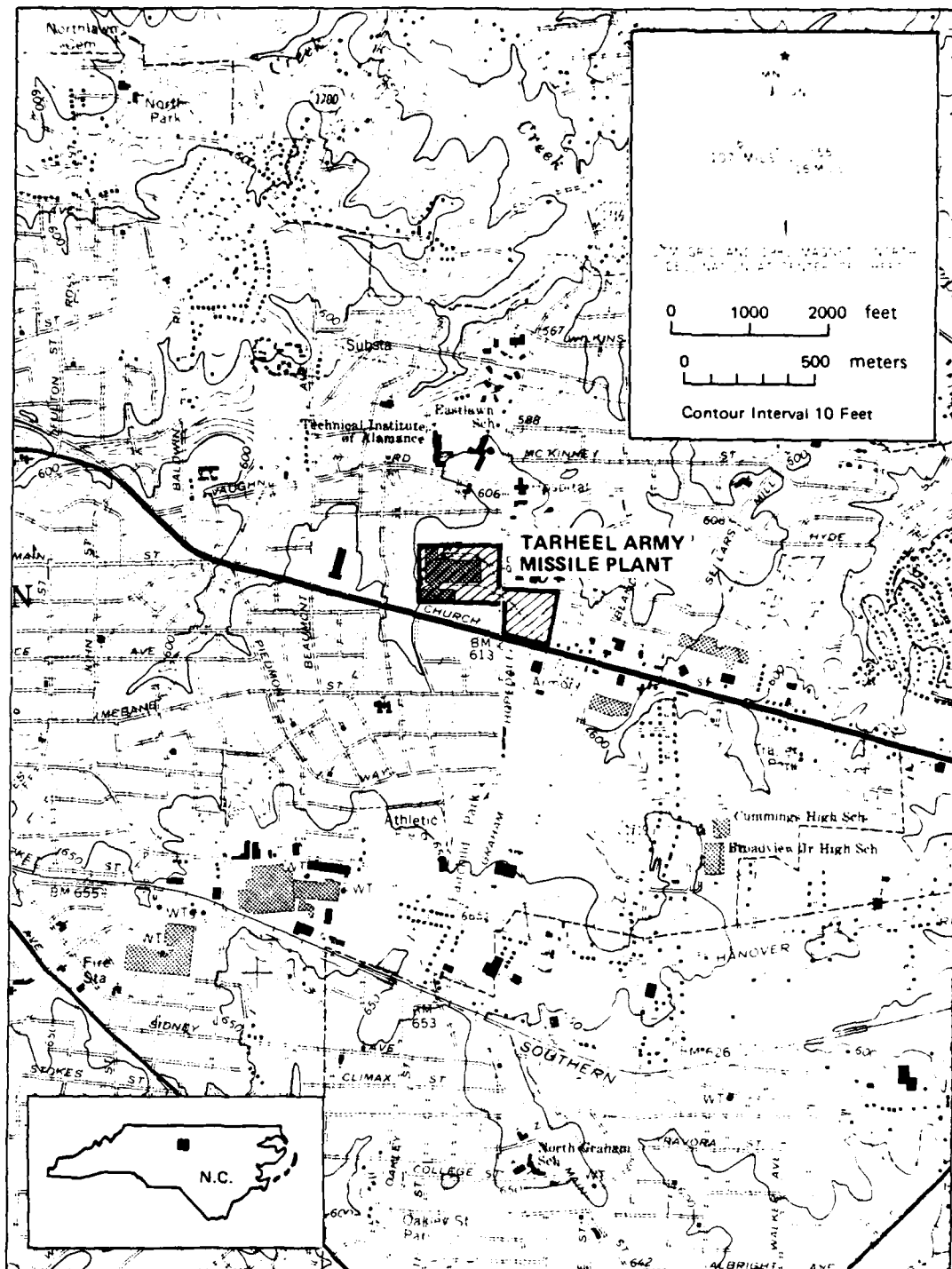
The following report is an overview of and recommended management plan for the prehistoric and historic archeological resources that are presently known or likely to occur on the Tarheel Army Missile Plant in Burlington, Alamance County, North Carolina (Figure 1-1). This facility is an installation of the U. S. Department of the Army DARCOM (Materiel Development and Readiness Command), which as a reservation of public land has responsibilities for the stewardship of the cultural resources that are located on it. The assessments and recommendations reported here are part of a larger command-wide cultural resource management program (the DARCOM Historical/Archeological Survey, or DHAS), which is being conducted for DARCOM by the U. S. Department of the Interior's National Park Service (NPS). The following is that portion of the facility-specific survey that is focused on the prehistoric and historic resource base of the Tarheel Army Missile Plant (AMP), and was developed in accordance with the Level A requirements as set forth in the archeological Work Plan (Knudson, Fee, and James 1983). A companion historic architectural study is in preparation by NPS's Historic American Building Survey (HABS), but it is not yet available (William Brenner, personal communication 1984).

The following chapter introduces the Tarheel AMP archeological overview and management planning effort. Federal regulations requiring such work and effort are briefly summarized. Also included are brief introductions to the Tarheel facility, the lack of previous archeological work there, and the sociocultural context of any potential archeological resources that might merit management consideration.

1.1 PURPOSE AND NEED

A corpus of Federal laws and regulations mandate cultural resources management on DARCOM facilities. Briefly these are:

- The National Historic Preservation Act of 1966 as amended (80 Stat. 915, 94 Stat. 2987; 16 USC 470) which includes requirements to,
 - inventory, evaluate, and where appropriate nominate to the National Register of Historic Places all archeological properties under agency ownership or control [Sec. 110 (a)(2)]



Note: Base map is the USGS Burlington, NC, 7.5 min. topographic sheet (1969)

Figure 1-1. MAP OF THE GENERAL VICINITY OF THE
TARHEEL ARMY MISSILE PLANT

- prior to the approval of any ground-disturbing undertaking, take into account the effect of that project on any National Register-listed or eligible property, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the proposed project (Sec. 106)
- complete an appropriate data recovery program on an eligible or listed National Register archeological site prior to its being damaged or destroyed [Sec. 110 (b)], as reported by the House Committee on Interior and Insular Affairs [96th Congress, 2nd Session, House Report No. 96-1457, p. 36-37]
- Executive Order 11593 (36 FR 8921), whose requirements for inventory, evaluation, and nomination, and for the recovery of property information before site demolition, are codified in the 1980 amended National Historic Preservation Act
- The Archeological and Historic Preservation Act of 1974 (88 Stat. 174, 16 USC 469), which requires that notice of an agency project that will destroy a significant archeological site be provided to the Secretary of the Interior; either the Secretary or the notifying agency may support survey or data recovery programs to preserve the resource's information values
- The Archeological Resources Protection Act of 1979 (93 Stat. 721, 16 USC 470aa; this supersedes the Antiquities Act of 1906 [93 Stat. 225, 16 USC 432-43], with provisions that effectively mean that
 - the Secretary of the Army may issue excavation permits for archeological resources on DARCOM lands (Sec. 4)
 - No one can damage an archeological resource on DARCOM lands without a permit, or suffer criminal (Sec. 6) or civil (Sec. 7) penalties
- 36 CFR 800, "Protection of Historic and Cultural Properties" (44 FR 6068, as amended May 1982); these regulations from the Advisory Council on Historic Preservation set forth procedures for compliance with Section 106 of the National Historic Preservation Act
- Regulations from the Department of the Interior for determining site eligibility for the National Register of Historic Places (36 CFR 60, 36 CFR 63), and standards for data recovery (proposed 36 CFR 66)
- United States Department of the Army procedures and standards for the preservation of historic properties (650.181-650.193; Technical Manual 5-801-1; Technical Note 78-17; Army Regulation 420), and procedures for implementing the Archaeological Resources Protection Act (32 CFR 229).

These procedures should be integrated with planning and management to insure continuous compliance during operations and management at each facility. This can best be achieved by an understanding of the procedures implied by the regulations and an awareness of the cultural resources potential at each facility.

1.2 THE TARHEEL ARMY MISSILE PLANT

This facility began in 1927 as a textile mill built on 22 acres of land on the Graham-Hopedale Road near the eastern edge of Burlington, North Carolina. A second tract of 10 acres across the road served as an employee parking lot (Figure 1-2). The property was acquired for the government by the Defense Plant Corporation on 13 February 1942. Several buildings, a railroad spur, and a paved airstrip were added for the use of Fairchild Aircraft Corp. in the production of training aircraft from 1942 to 1945. The plant was used briefly in 1945 by Firestone Tire and Rubber Company to rebuild tanks. This operation was continued until the end of World War II when the plant was declared surplus.

The original plant area and parking lot were leased by Western Electric in March 1946 and have been used for research and production of a wide variety of electronics and related items since that time. More buildings have been added to the main portion of the facility so that now all but the eastern edge of this sector is under pavement or permanent structures. The parking lot across the road has been paved but otherwise remains little changed from the mid-1940s. The old airstrip remains in existence but is now largely occupied by various industrial structures unrelated to the missile plant, and is owned by the city of Burlington (Anonymous, n.d.).

1.3 SUMMARY OF PREVIOUS ARCHEOLOGICAL WORK CONDUCTED ON THE TARHEEL ARMY MISSILE PLANT

There has been no previous archeological work done on the facility.

1.4 THE SOCIOCULTURAL CONTEXT OF ARCHEOLOGICAL RESOURCES IN THE VICINITY OF THE TARHEEL ARMY MISSILE PLANT

Local archeological resources can be expected to have quite different significance to various groups and individuals in the area, or even far beyond the area. Archeologists are concerned with archeological resources in terms of the scientific information they can provide about human ways of life as they have developed through time. This concern includes topics ranging from the technology of particular tools to integration of local data into large-scale patterns of human activity.

Historians share many concerns of the archeologist but confine themselves to the relatively short, recent period of written records. Their interests generally emphasize the use of archeological data to confirm and/or expand the written record of the area. Within this context the Moravians were the most prominent early European settlers and are particularly interested in resources relating to their heritage in the area.

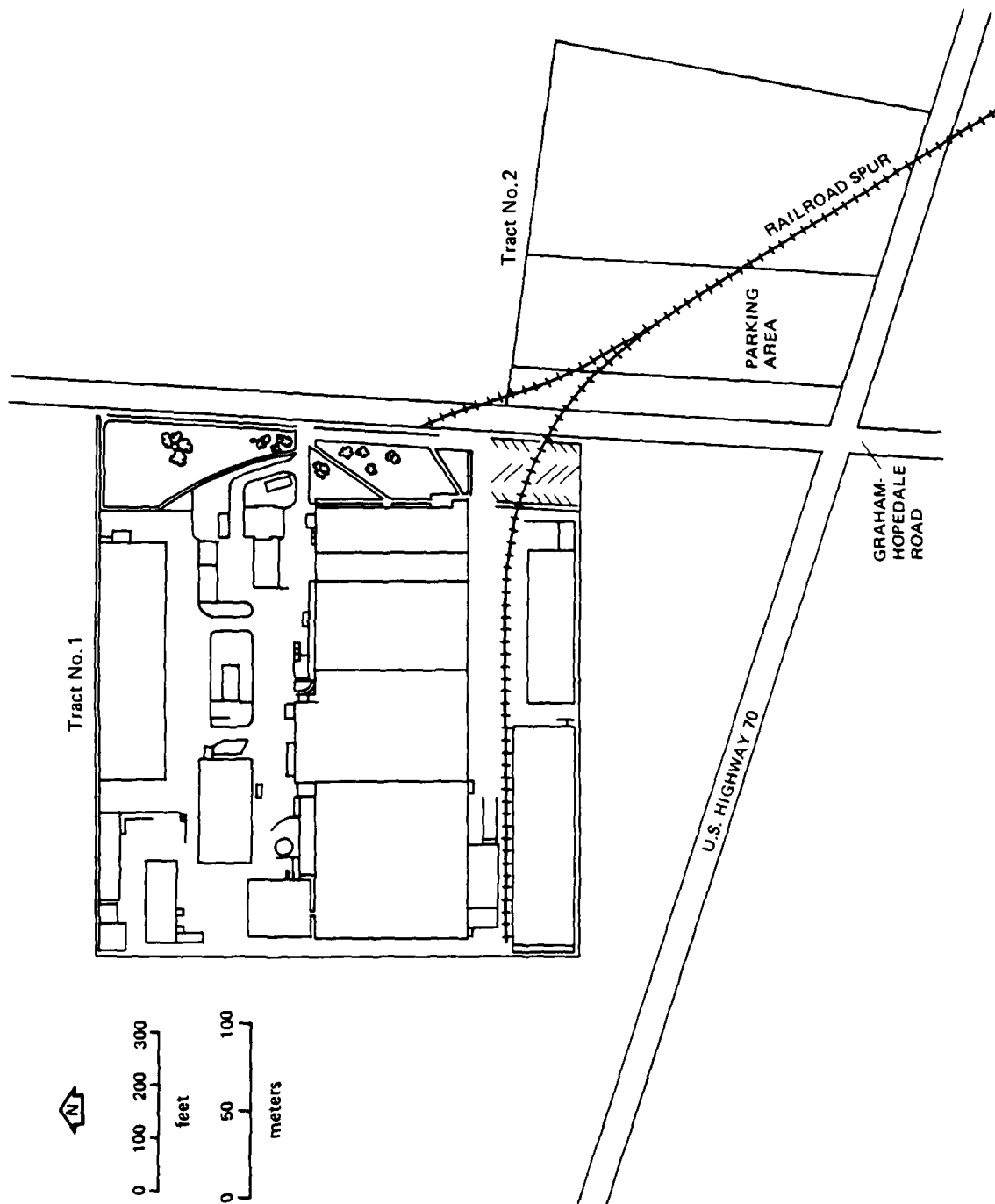


Figure 1-2. MASTER BASE MAP OF THE TARHEEL ARMY MISSILE PLANT

The original inhabitants of the area, the Indians, are now virtually invisible locally, and the tribes that once resided in the area have been out of existence for 200 years. The Catawbas are the surviving tribe most closely related to those who once occupied the area, but their association with this area is conjectural. There are many Indian groups in the nation and region that take an active interest in archeological resources. The interests of these groups span the concern for the prehistoric resources, to the contemporary use of these resources as vehicles for social and political activities. Any actual or potential disturbance or destruction of Indian burials is a particularly sensitive and emotional issue with many Indians and must be handled with great care whenever raised. North Carolina has enacted specific legislation in 1981 concerning the discovery and disturbance of unmarked burials, including those of federal property (North Carolina Statutes, Chapter 70, Article 3).

AN OVERVIEW OF THE CULTURAL AND RELEVANT NATURAL HISTORY OF
THE TARHEEL ARMY MISSILE PLANT

2.1 THE PHYSICAL ENVIRONMENT

2.1.1 Earth Resources

The Tarheel Army Missile Plant is located in the rolling uplands of the central North Carolina Piedmont, near the headwaters of the Haw River. It is on Enon Fine Sandy Loam and Wilkes soils (Goldston, Kaster, and Turpin 1960: Sheet 14) on a low ridgetop and extending to the edge of a small seasonal stream. Mr. James Lee (personal communication 1983), the factory planning engineer, noted that bedrock lies about 22 feet below the surface in the eastern portion of the main plant area, but had not identified the rock involved. The plant is within the area of complex metamorphic rock formations known as the Carolina State Belt; Goldston, Kaster, and Turpin (1960:35, 54) note that Enon soils formed on greenstone schist and that Wilkes soils formed on granite which has been cut by dikes rich in iron and magnesium. Both soils are acid to very acid and subject to severe erosion. Greenstone, rhyolites, and "Carolina Slate" were all important lithic resources for the prehistoric occupants of the region.

2.1.2 Water Resources

The water resources of the Tarheel facility consist of the adjacent small intermittent stream along and west of the western plant boundary. A permanent water source is provided by Haw River, 1.2 miles (2 km) northeast of the facility. There are no surviving natural swamps or springs in the vicinity.

2.1.3 Modern Climate

The modern climate of the area can be generally characterized as one with mild winters and hot summers. Winter temperatures include an average low of 32° F. and average high of 52° F. in January, while July average low is 67° F. and average high is 89° F. (Gibson 1967:29-30). Rainfall averages 46 inches per year and snowfall averages 8 inches. Winter rains are usually from frontal passages and summer rains are thunderstorms, without pronounced seasonal variation in amounts. Occasional heavy rains result from hurricanes, but the area is too far inland to suffer significant wind damage from such storms.

2.1.4 Plant Resources

The basic modern vegetation of the area is a mixed oak-hickory-pine forest with a wide variety of understory woody and herbaceous species.

The main species overall are white, red, black, post, and chestnut oaks; hickory; and yellow poplar, with Virginia and shortleaf pines as minor inclusions (Goldston, Kaster, and Turpin 1960:57). Enon Fine Sandy Loam is noted to have originally had a mixed vegetation of mostly hardwoods (Goldston, Kaster, and Turpin 1960:35), and Wilkes soils had mainly blackjack oak, post oak, shortleaf pine, and cedar (Goldston, Kaster, and Turpin 1960:54).

2.1.5 Animal Resources

Animal species noted by Lawson (1967) and others as of particular importance in the area during the early 1700s included deer, bear, turkey, rabbit, raccoon, opossum, and passenger pigeon. As might be expected, most were important for their meat and hides, but bears were hunted primarily for fat and hides rather than for meat. Mammal bones were routinely used by the Indians for a variety of basic tools, including needles, awls, and hide processing tools. The area is too far upstream for anadromous fish such as herring and sturgeon to have been a significant food resource.

2.1.6 Paleoenvironment

Paleoenvironmental research emphasizing pollen studies has been active in the Carolinas for over 30 years and continues today. During the period since the middle of the last glaciation, the area has undergone dramatic climatic and ecological changes. The most important of these, characterized by their major vegetation types, include a northern pine-spruce parkland up to about 11,000 BC, replaced by a northern hardwood forest that lasted until about 7500 BC. This was replaced by an oak-hickory forest, which gave way by about 5000 BC to the modern oak-pine forest (Claggett and Cable 1982:679). Implied conditions thus range from those of modern central Canada during the last glaciation to those of areas southward as the climate became warmer. It should be noted that successive forest composition and associated climatic conditions usually supported quite different numbers and species of animals and thus provided significantly different sets of subsistence resources to the human populations present.

2.2 THE CULTURAL ENVIRONMENT

2.2.1 Prehistory

The Paleo-Indian tradition (Table 2-1) dates from at least 10,000 BC to about 8000 BC and is present throughout the New World. In eastern North America it is characterized by large fluted projectile points found in association with scrapers and flake knives. Paleo-Indian people were apparently migratory hunters living in small bands. At present, no undisturbed Paleo-Indian sites have been discovered in the Piedmont region, but fluted points have been found throughout North Carolina and Virginia.

The Archaic period extends from about 8000 BC to 1000 BC. Archaic subsistence was based on hunting and gathering, with increasing emphasis on gathering activities. The large game animals were now extinct and

Table 2-1. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF TARHEEL ARMY MISSILE PLANT

Cultural Unit		Kinds of Archeological Remains Representative of Period		
Tradition	Period or Phase	Date	General Settlement Patterns	General Subsistence Systems
Euro-american	Industrial Development	AD 1890 to Present	Family farmsteads, scattered residential areas, towns and small cities linked by railroads and highways	Agriculture; commercial forests; manufacturing, service, and transport industries
	Civil War and Recon-struction	AD 1860 to 1890	Family farmsteads, towns and small cities	Agriculture and related light industry
	Post-Colonial	AD 1780 to 1860	Family farmsteads, small towns	Agriculture and home industry
	Colonial	AD 1740 to 1780	Family farmsteads	Agriculture and home industry
Frontier	Historic Period Indian	AD 1650 to 1740	Villages and seasonal camps	Hunting, gathering, and agriculture
Late Woodland	Clement, Vincent, and Uwharrie	AD 500 to 1650	Villages and seasonal camps	Hunting, gathering and agriculture
Middle Woodland	Yadkin	AD 200 to 500	Villages and seasonal camps	Hunting and gathering, some horticulture probable

Dominance of manufactured goods; machine-made glass containers, tin cans, automobile parts, wide range of synthetic materials after 1945

Dominance of manufactured goods; machine-made glass bottles, white ware ceramics with decoration uncommon, harness fittings, machine-made brick

Square nails; dark glass liquor bottles; earthenware; edge-decorated, handpainted, transfer printed pearlware and whiteware; hand forged iron tools and hardware; handmade brick

Hand-forged nails, iron tools, and hardware; earthenware and hand-painted creamware; dark glass wine bottles; handmade brick

Hillsboro, Dan River, and Gaston Series ceramics; small triangular arrow points; glass beads; metal pots and tools; lithic debris

Clement and Vincent Series ceramics in Roanoke drainage, Uwharrie Series ceramics in Yadkin and Haw drainages; medium-sized triangular arrow points; stone celts

Yadkin Series ceramics, medium-sized triangular arrow points, stone celts

Table 2-1. A SUMMARY OF THE CULTURAL CHRONOLOGY OF THE AREA OF TARHEEL ARMY MISSILE PLANT (concluded)

Cultural Unit		Kinds of Archeological Remains Representative of Period			
Tradition	Period or Phase	Date	General Settlement Patterns	General Subsistence Systems	
Early Woodland	Badin	600 BC to AD 200	Hamlets and/or seasonal camps	Hunting and gathering, some horticulture possible	Badin Series ceramics, large triangular projectile points, stone celts
Late Archaic	Savannah River	3000 to 600 BC	Seasonal camps	Hunting and gathering	Savannah River projectile points; grooved axes; steatite vessels; fiber-tempered ceramics; atlatl weights
	Halifax	4000 to 3000 BC	Seasonal camps	Hunting and gathering	Halifax projectile points
Middle Archaic	Guilford, Morrow Mountain, and Stanley	5500 to 4000 BC	Seasonal camps	Hunting and gathering	Guilford, Morrow Mountain, and Stanley projectile points, chipped stone axes; atlatl weights
Early Archaic	Late Kirk, Early Kirk, Palmer, Hardaway, and Dalton	8500 to 5500 BC	Seasonal camps	Hunting and gathering	Kirk stemmed and corner-notched points, Palmer corner-notched points, Hardaway and Dalton points, end scrapers
Paleo-Indian	Clovis	10,000 to 8500 BC	Seasonal camps	Hunting and gathering	Clovis fluted points, end scrapers, composite tools on blades

smaller, more agile, animals such as deer and bear roamed the woods. The meat was supplemented with seeds, nuts, and berries gathered from the forest. Some of these were ground into meal with stone mortars. Increasing emphasis on seasonally concentrated food sources (e.g., hickory nuts) as major elements of the diet was characteristic throughout the eastern woodlands by the Late Archaic.

Pottery was introduced during the transition between the archaeological Late Archaic and Early Woodland traditions, and consisted primarily of bowls and subconoidal-based jars with cordmarked and fabric-impressed surfaces. The initial pottery in the Piedmont is the sand-tempered Badin ware and is associated with large triangular points. While there are no dates available for this ware, the associated points are closely similar to types dated to the AD 200-600 era to the west (Keel 1976:224-225).

This basic ceramic tradition continued throughout the Virginia-Carolina piedmont and coastal plain zones, with relatively minor temporal and spatial variation, into the historic period. The ceramics are accompanied by a series of continually more diminutive triangular projectile points. Other items in common use include axes with polished stone blades (celts) set into the handles, a variety of bone weaving and leatherworking tools, and both steatite and clay smoking pipes.

Settlements during the Woodland period consisted of small villages along the main stream valleys and numerous hamlets and short-term camps scattered along the terraces and in the uplands beyond. The earliest subsistence data for the period indicates a continuation of the hunting and gathering economy of the Archaic period. By the time of European contact the cultivation of corn, beans, squash, pumpkins, tobacco, and a variety of minor crops had become a major part of the economy.

During the middle of the sixteenth century a new cultural group came from the south up the Pee Dee Valley. This was the Pee Dee branch of the South Appalachian variant of Mississippian culture. The Pee Dee people built large stockaded villages situated in broad floodplains. They constructed pyramidal mounds with square or rectangular public buildings in their political and religious centers. Their ceramics were distinctive with plain, complicated-stamped, and textile-wrapped surface finishes. A variety of tools were made of shell, stone, bone, and copper. The Pee Dee phase economy was based on intensive floodplain agriculture and hunting. While their settlements remained in the Coastal Plain sector of the Pee Dee-Yadkin River drainage, their influence undoubtedly extended into the Piedmont.

2.2.2 Ethnohistory

The historic contact period in Piedmont North Carolina begins after AD 1700. This Frontier tradition (Table 2-1) was characterized by small palisaded villages, small stone projectile points and some metal tools, and simple-stamped, check-stamped, cob-impressed, and plain surface finish ceramics (Coe 1952:310).

The Occaneechi (Figure 2-1) are an example of this culture. In 1701 Lawson met the Occaneechi on his journey through North Carolina, stayed at their village, and later described his experience. This village of the Occaneechi is located near Hillsboro on the Eno River, some 20 miles east of the Tarheel AMP. Lawson describes the village very favorably, saying "no Indians having greater plenty of provisions...still possesses the flower of Carolina" (Lawson 1967:61).

This plenty was short-lived, however, as soon after Lawson's visit, the first Euroamerican settlers began trickling into the area. As more and more Europeans arrived, the Indian population began to decrease and move out of the Carolina Piedmont. By 1750, no Indians were left in the region.

2.2.3 History

The period between 1730 and 1775 was one of rapid growth for the North Carolina Piedmont. Some of these people came from Europe, but most came from Pennsylvania and other northern states. The Scotch-Irish were one of the first groups to move into North Carolina from Pennsylvania. They developed agriculture and local light industry such as weaving, woodworking, and blacksmithing.

Along with the Scotch-Irish came German settlers. Most of the Germans belonged to one of three religious sects: Lutheran, Reformed, or more significantly, the Moravians. The first group of Moravians established the town of Bethabara (Figure 2-1) in 1753, and in 1766 they founded Salem. The Moravians tended to segregate themselves from other settlers in order to preserve their religious, social, and economic customs. They were an enterprising people: in 1786 a visitor reported that every house in Salem was supplied with water brought a mile-and-a-half in conduits, and they also had waterworks and fire fighting equipment (Lefler and Newsome 1973:87).

The chief economic pursuit in the Piedmont region was farming. Corn and wheat were grown in the same field year after year until the soil was exhausted. New fields were then cleared and planted. Obtaining new land was easy since it was plentiful and inexpensive. Industry during the Colonial period was extremely undeveloped due to the lack of capital and skilled labor. Each household largely produced its own necessities, with only a few items purchased from outside the local community.

The American Revolution had little effect on the North Carolina Piedmont; however, the period between the Revolutionary and Civil Wars was a period of general decline for the Piedmont region. Agriculture remained the major economic base, and most of the farms were small and transportation was difficult.

Industry did not develop in the area until after 1815. The first spinning mills grew rapidly in number, but remained small and served only local areas. Despite the establishment of the spinning industry, population continued to decline rapidly due to general social and economic conditions and a political system that favored the east over the Piedmont.

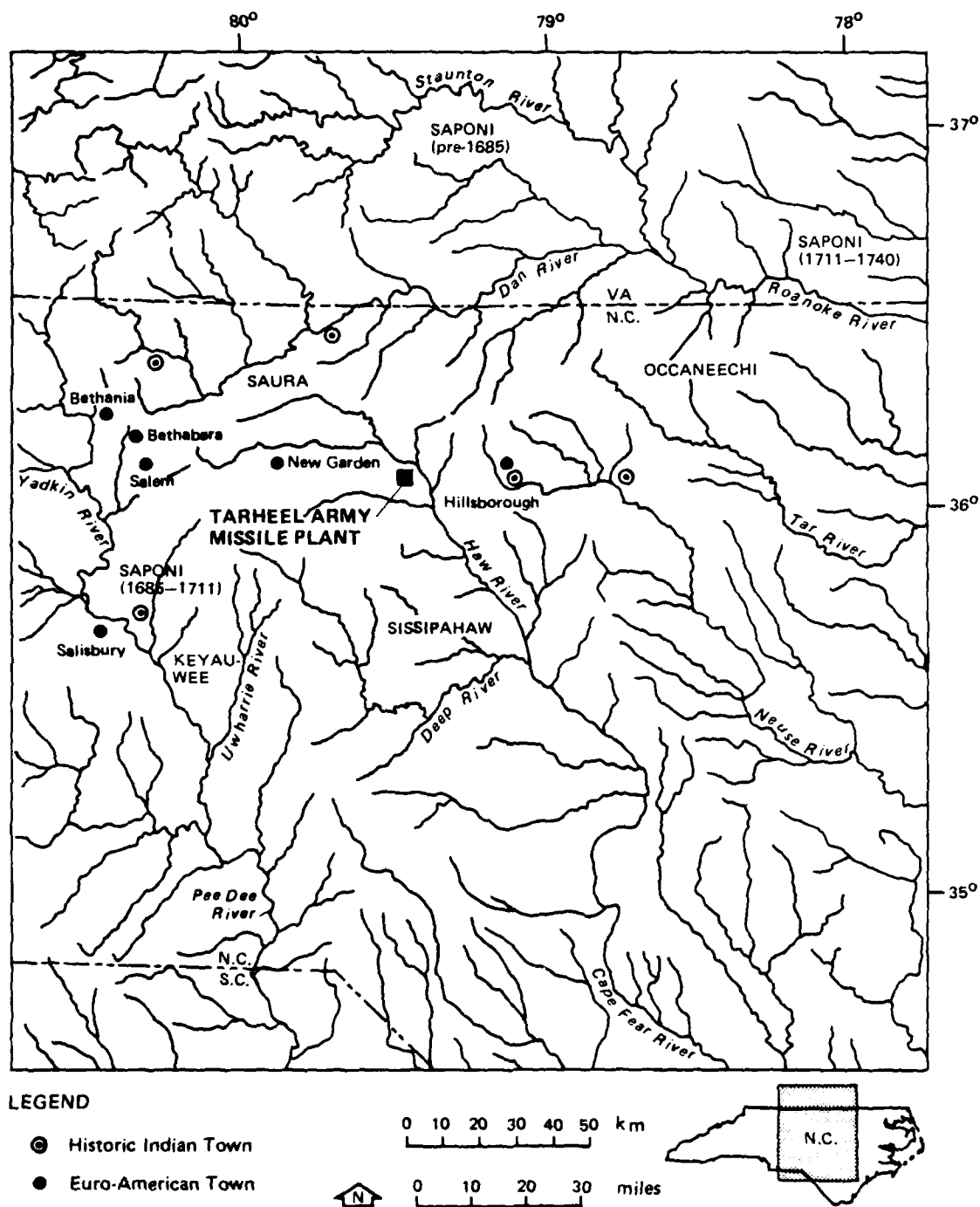


Figure 2-1. TARHEEL ARMY MISSILE PLANT IN RELATION TO HISTORIC INDIAN TRIBES AND EARLY EUROAMERICAN SETTLEMENTS

This development slump was finally stabilized just prior to the outbreak of the Civil War by improved transportation facilities. Several railroads and plank roads were constructed to connect the Piedmont with major cities in the east.

Very little activity directly connected with the Civil War took place in the North Carolina Piedmont, but the area served as a supply center and railroad distribution point for military supplies. The war stimulated local industry. The northern blockade along with military and civilian needs produced higher prices. Still, many cotton mills and tobacco factories were forced to close due to invasion, bankruptcy, or plant deterioration (Lefler and Newsome 1973:503). After the war, lack of capital and experience caused the return to staple crop agriculture and the reestablishment of small industrial units. By 1870 the cotton industry was exceeding its 1860 production. The 1890s' addition of northern capital along with cheaper raw materials and labor resulted in the textile industry's development of a national market by 1900.

Tarheel facility personnel are encouraged to contact the North Carolina SHPO for additional prehistoric and historic themes relative to the state historic preservation plan.

2.3 ARCHEOLOGICAL RESEARCH DIRECTIONS

2.3.1 Regional Concerns

Regional prehistoric archeological concerns for the area may be broadly characterized as the ubiquitous problems of cultural sequences, cultural content, and cultural ecology. Within this framework, Coe (1964) has effectively determined the preceramic cultural sequence for the area including the Tarheel AMP, and studies such as some included in the Claggett and Cable (1982) volumes on two stratified sites 25 miles downstream may focus in more detail on the cultural content and ecology of specific complexes.

Coe (1952, 1964) has established basic ceramic sequences for the Yadkin and Dan-Roanoke River drainages in Piedmont North Carolina and adjacent Virginia, and has tied the terminal ends of these sequences to specific tribes in the area during the late 1600s and early 1700s AD. A long series of workers (Claggett and Cable 1982; McCormick 1970; Smith 1964; Wilson 1976) has sought to develop a sequence for the Upper Haw drainage with little success. The sequences developed all suffer from lack of firm dating and are thus difficult to correlate, except at their historic end where European trade goods provide a means of dating the complexes involved. More precise definition and dating of the prehistoric ceramic complexes of the region is imperative before much further progress can be made in dealing with them. Studies emphasizing a variety of topics in cultural ecology and technology (many sections in Claggett and Cable 1982; Egloff, Barber, and Reed 1980; Wilson 1977) have begun to provide more insight into some regional cultures.

Historic archeology has been narrowly focused on specific structures or historic districts, but can be expected to become more involved with ecological, technological, and systemic concerns in the future.

2.3.2 Installation-Specific Archeological Research Directions

Early and recent (Woodall 1976a, 1976b, 1979) archeological survey in the vicinity of the facility has identified 38 sites within a five-mile radius, but only one has ceramics present. It appears to be a historic Hillsboro Phase hamlet related to sites in adjacent Orange and Guilford Counties. All sites are in or adjacent to large stream valleys, a pattern which suggests minimal potential for such sites on the facility. Several apparent large preceramic camps are also present in the vicinity, and these include occupations on ridgetops. Components present on the preceramic sites span the entire range of Early, Middle, and Late Archaic complexes in the region. So far as prehistoric occupations are concerned, it appears that the most likely contribution to be made by any site on the facility will be in terms of the local and regional settlement patterns of one or more preceramic complexes. Any data on historic period occupations is most likely to occur along the Graham-Hopedale Road frontage in the form of farmhouse or outbuilding remains.

AN ASSESSMENT OF ARCHEOLOGICAL RESOURCE PRESERVATION AND SURVEY ADEQUACY

3.1 ENVIRONMENTAL CONSTRAINTS TO SITE PRESERVATION

The primary environmental factor to be sought in assessing potential site preservation in the area is whether erosion or deposition of soil is the long-term process affecting the locality in question. If deposition is or has been primary and then sealed, intact cultural remains may be expected. Erosion of the soil may leave heavy objects more or less in place but drop them to elevations substantially below the deposits of which they were once a part. Floodplains and rock shelters represent common features where deposition is usually the primary process, while ridgetops and slopes normally undergo long-term and often severe erosion. Secondary factors affecting site preservation include soil chemistry, moisture permeability, and grain size.

The topographic position of the Tarheel Army Missile Plant and the soils present are such that the potential for severe erosion of any archeological site on the main plant area is very high, although somewhat less in the parking area. The acidity of the soil can be expected to have effectively removed all uncalcined bone from any site present.

3.2 HISTORIC AND RECENT LAND USE PATTERNS

The facility area appears to have gone directly from agricultural to industrial use in 1927 as a result of local efforts to obtain industrial jobs for the community (James Lee, personal communication 1983). While it was never cultivated with modern machinery capable of plowing to depths of over a foot, severe long-term soil loss may be presumed to have occurred over the area during the past 200 years. Construction of the parking area may have involved relatively little soil disturbance, but construction of the main plant involved major fill work in the southwestern portion of the tract and some cutting in the southeastern and northern portions (Table 3-1, Figure 3-1). Fill depths in the southwestern quadrant appear to reach as much as 15 feet. Virtually the entire property except for the main plant frontage along the Graham-Hopedale Road is now covered with pavement or buildings.

3.3 SUMMARY ASSESSMENT OF ARCHEOLOGICAL DATA ADEQUACY, GAPS

Since no archeological survey on the property has been conducted, there are no data to assess and the adequacy of coverage must be considered to be none. The characteristics of the facility topography, soil,

Table 3 1. A SUMMARY OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE TARHEEL ARMY MISSILE PLANT

GDA No.	Type of Disturbance	Date Constructed (yr)	Reference	Area Disturbed (acres)	Estimated Depth Below Surface (ft)	Ratio of Disturbed to Total Area	Location of Disturbed Area ^b					USGS Quad Sheet	Coincidental Sites
							UTM	Legal Reference			Township	Range	Section
								North	East	North			
GDA-1	Construction of industrial buildings (Tract 1)	1927-1980	Facility plans	15	3 to 10	10:10	3995785 3995833 3995595	644857 644547 644547	-	-	-	B769R	None
GDA-2	Parking area; Tract 2 frontage and fill areas	Pre-1942	Facility plans	17	1	10:10	39955547	644428	-	-	-	B769R	None

^a Ground Disturbance Areas (GDAs) as mapped in Figure 3-1.

^b UTM = Universal Transverse Mercator coordinates, Zone 17. If the area is less than 10 acres in extent, the coordinates record the approximate center of the site. If it is larger, they record the corners of a 3-or-more sided figure than encloses the site. Coordinates have been calculated specifically for this study. Burlington, North Carolina 7.5-minute (1965) sheet, revised 1981. Township, Range, and Section data are not available for this area.

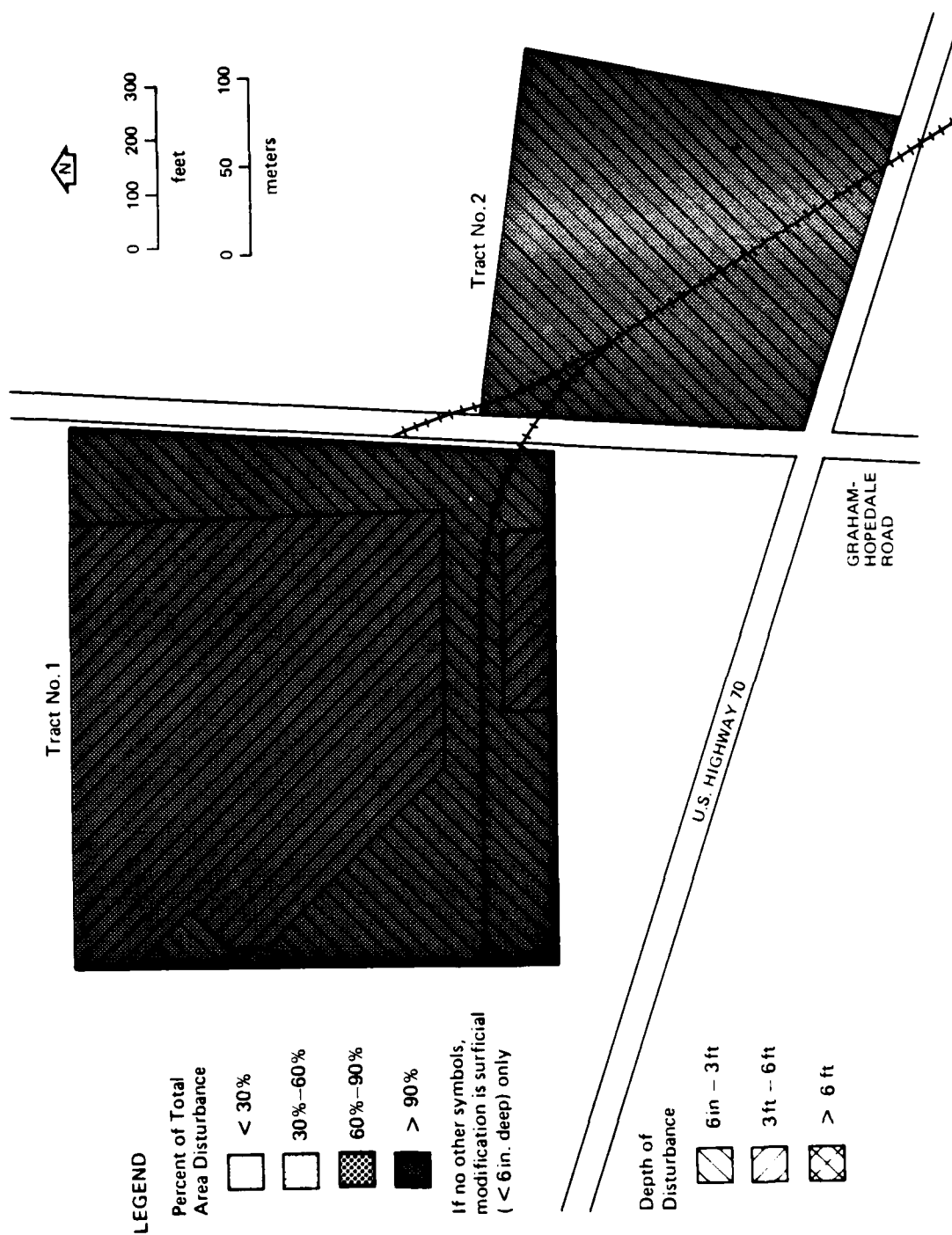


Figure 3-1. MAP OF HISTORIC AND MODERN GROUND DISTURBANCE THAT MIGHT LIMIT THE PRESENT ARCHEOLOGICAL RESOURCE BASE ON THE TARHEEL ARMY MISSILE PLANT

and even pre-1927 land use patterns combined with the presently known local settlement patterns suggest that the potential for preservation of intact prehistoric archeological resources is also very low. Given the extent and scale of both erosion and grading activities on the property, the historic period archeological resources most likely to survive are such features as structure footings and basements, wells or large cisterns, outhouse pits, and root cellars. Archeological resource management at the facility will thus need to focus primarily on determination of the presence or absence of such features, and then proceed from that point of reference.

KNOWN ARCHEOLOGICAL RESOURCES ON THE TARHEEL ARMY MISSILE PLANT

There are no known archeological resources reported to occur on the Tarheel Army Missile Plant, and the probability is low that unidentified sites occur there.

5.0

AN ASSESSMENT OF THE SIGNIFICANCE OF THE ARCHEOLOGICAL RESOURCE BASE
ON THE TARHEEL ARMY MISSILE PLANT

There are no known archeological resources on the Tarheel Army Missile Plant, and therefore there is no basis upon which to judge the significance of any sites that might be found there under the parking lot or in deeply buried contexts. If such were found, their significance would be evaluated in the context of U. S. Department of the Interior guidelines (36 CFR 60.6) and the North Carolina State Historic Preservation Plan.

A RECOMMENDED ARCHEOLOGICAL MANAGEMENT PLAN
FOR THE TARHEEL ARMY MISSILE PLANT

6.1 FACILITY MASTER PLANS AND PROPOSED IMPACTS

No long-term planning document is available for the Tarheel Army Missile Plant. Facility personnel state that no major modification is planned there and that operations and maintenance activities would not disturb subsurface deposits.

6.2 APPROPRIATE ARCHEOLOGICAL MANAGEMENT GOALS WITHIN THE TARHEEL ARMY MISSILE PLANT'S MASTER PLAN

6.2.1 General Facility Planning

Army Regulation 420, drafted pursuant to the National Historic Preservation Act, and 36 CFR 800 (Section 1.1) require that each DARCOM installation have a Historic Preservation Plan (HPP) or have documentation on file indicating whether there are any known archeological resources appropriate to such management planning. At present, there is no such negative declaration, although potential archeological sites may exist on the facility.

The Department of the Army AR 420 regulations prescribe Army policy procedures and responsibilities for compliance with the National Historic Preservation Act of 1966, as amended; for the maintenance of state-of-the-art standards for preservation, personnel and projects; and for accomplishment of the historic preservation program (Fig. 6-1). This HPP has the following objectives:

- Integration of historic preservation requirements with the planning and execution of military undertakings such as training and construction and real property or land use decisions
- Implementation of a legally acceptable compliance procedure with the Advisory Council for Historic Preservation (ACHP) and the State Historic Preservation Office (SHPO)
- Outline priorities for acquiring additional information to determine if there may be additional projects not yet located or identified
- Establishment of a procedure for the evaluation of historic properties

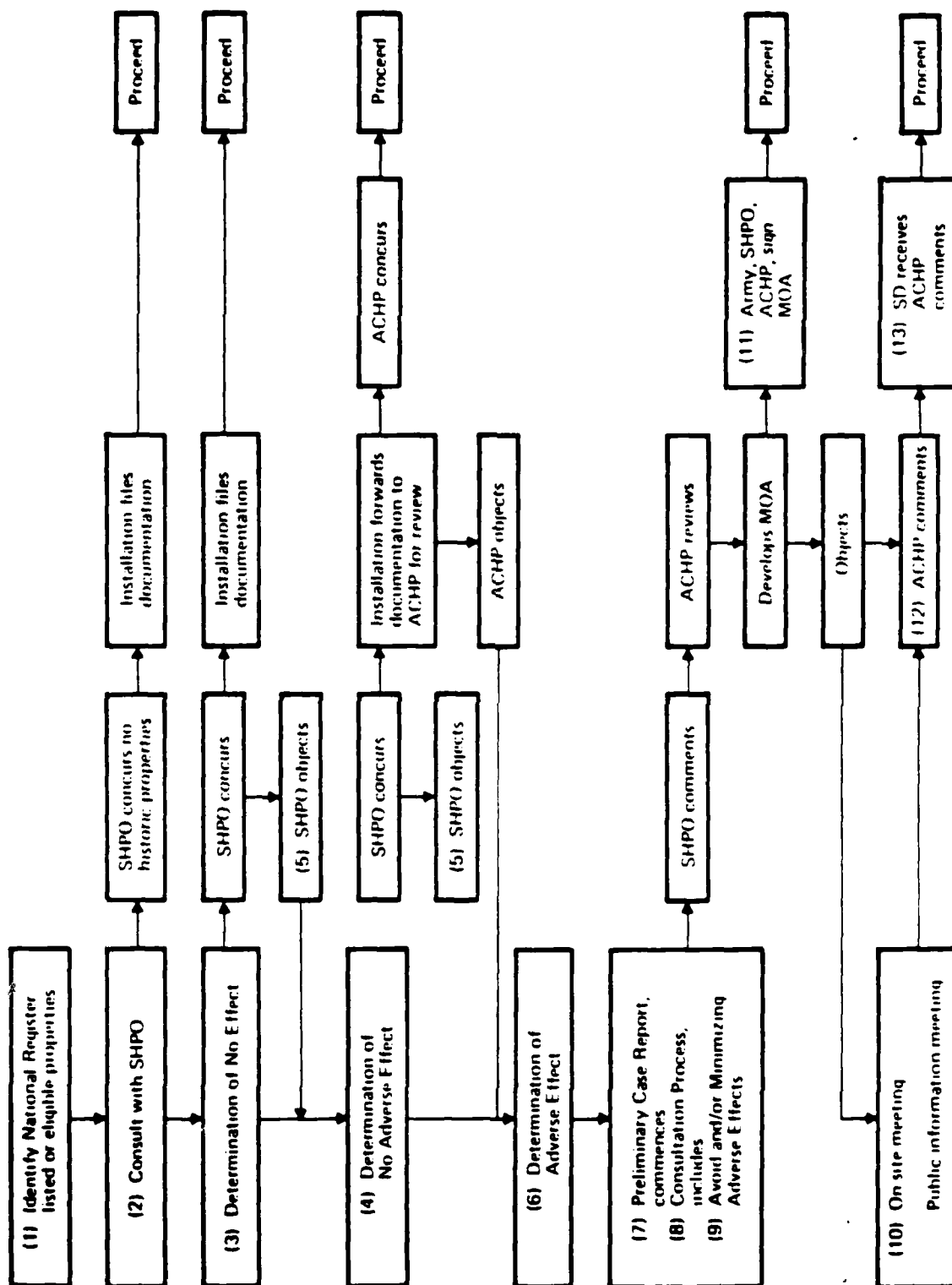


Figure 6 1. PROCEDURE FOR COMPLIANCE WITH REGULATIONS OF THE ADVISORY COUNCIL, IN ACCORDANCE WITH 36 CFR 800 (AR 420, Figure 1)

- Ranking of facility projects by their potential to damage historic properties
- Provision of guidelines for the management of historic properties
- Provision of historic and archeological data for the installation's information systems
- Identification of funding, staffing, and milestones needed to implement the plan.

6.2.2 Project-Specific Resource Protection or Treatment Options

No archeological sites, either known or potential, have been documented on the Tarheel AMP. There is a possibility that intact archeological deposits (other than pre-1927 cisterns, privies, cellars, foundations) with historical significance may remain beneath the parking lot and manufacturing plant. No major construction currently is planned for the facility. A draft historic properties for the Tarheel AMP has been completed (Building Technology Incorporated 1983), and did not include intensive archival review of pre-1927 land use of the area.

6.2.3 A Summary of Recommended Management Directions and Priorities for Effective Compliance and Program Management

It is recommended that an intensive archival search be conducted of the facility to identify potential historic archeological resources. The information derived from this work can be used to develop an HPP or a negative declaration for the facility, in conjunction with the North Carolina SHPO.

6.3 ESTIMATED SCOPE OF WORK AND COST LEVELS FOR PRESENTLY IDENTIFIABLE MANAGEMENT NEEDS

It is estimated the archival work will consist of 17-26 work-days of effort, and it is anticipated to range in cost from \$5000 to \$7000 in FY84 dollars, depending upon the extent of the documentary records and archeological resources indicated.

SUMMARY

The Tarheel Army Missile Plant (AMP) in Burlington, Alamance County, North Carolina, is located in the rolling uplands of the central North Carolina Piedmont, near the headwaters of the Haw River. The vicinity of the facility is known ethnohistorically, and historic communities settled by Europeans are documented. To date, however, no sites are recorded on or in the immediate vicinity of the AMP. The facility property was farmed until 1927, when a textile mill and parking lot were constructed on it. The property was acquired in 1942 and used for defense purposes, and since 1946 it has served as an electronics research and production facility. The property includes 33 acres of land that is almost completely covered by buildings or pavement; disturbance of the soil in the main part of the facility has been extensive and deep, while disturbance of the parking area seems to have been less severe.

No construction is planned for the Tarheel facility that would modify the current surface of the facility, and no operation or maintenance activities would have any subsurface impacts. Nearly all the acreage has been under buildings, pavement, or gravelled surfaces for at least the past 40 years. No archeological survey has been conducted on the property, and no sites have been recorded on it.

It appears that there is little likelihood that significant prehistoric archeological resources remain on the facility, but buried historic remains could have survived on part of the property. A detailed archival/documentary study is recommended to determine if there is any record of structures on land now included in the facility and if so, the location, nature, and uses of those structures. Such a study would form the basis for determining whether or not test excavations within the facility area are warranted, to identify significant sites needing further management consideration. Base cost of the initial study as recommended is estimated to range from \$5000 to \$7000 in FY84 dollars, exclusive of overhead, benefits, and inflation. This study will provide the data upon which to base an Historic Preservation Plan as required by current federal laws and regulations, or a negative declaration. A study such as recommended above appears to be the most practical first step toward acquisition of those data. Prior to any initiation of such work, it is strongly recommended that facility personnel consult with the SHPO of North Carolina for technical assistance in the development of a study.

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